

Short report

Ring-resolution of bruises – a little recognised phenomenon

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Abstract

Three examples are given of contusions resolving to form a ring pattern which might lead to a mistaken conclusion of causation. © 2006 Elsevier Ltd and AFP. All rights reserved.

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A bruise in the shape of a circle with an uncoloured centre is commonly interpreted as the result of a blow with a circular edge such as the end of a metal pipe, or by a spherical object, such as a cricket ball, which may cause a ring bruise in the same way as a cylindrical object may cause a ‘tram-line’ appearance.

The purpose of this report is to describe three injuries (Figs. 1–3) with very similar features. They developed from simple bruises, which commenced as homogeneous disc shaped contusions, but later could easily have been thought to be the result of more sinister trauma.

Two of these injuries occurred at different times, on the legs and one on the wrist of the author, as the result of simple minor accidents. Those on the legs were inflicted through clothing, one (Fig. 1) by a broken plank of wood and the other (Fig. 2) by a fall against a protruding piece of masonry. The small bruise on the wrist (Fig. 3) was caused during mechanical work on a car. No photographs were taken when the bruises were first inflicted as they were quite unexceptional. As the bruises healed, the centre resolved first, and the periphery extended slightly and faded at a slower rate. The photographs were taken at 10–14 days after injury.

I have been unable to find any reference in the literature to such ring patterns in resolving bruises. Two (Figs. 1 and 2) of these photographs were taken more than 20 years ago and the other (Fig. 3), in 2005. I have never recognised any similar lesions at autopsy, and it seems likely that particular conditions are required for the appearance to develop. They probably include the depth and size of the initial subcutaneous haemorrhage, the position of the injury and an appropriate time scale.

It could be imagined that the phenomenon could result in a bruise that might appear somewhat like a bite-mark. This is illustrated best in Fig. 2, in which it is even possible, wrongly, to suspect the presence of blurred individual tooth marks. The author can give an assurance that he has never been bitten on the leg or, for that matter, anywhere else on his body.

By their nature, the central pale area is only seen in bruises of at least a week old, but, unfortunately, it is well known that it is difficult to age bruises from their appearance.^{1,2} One point of differentiation is that in ring-resolution, the central area of pallor is usually near circular in outline.

The implication of these observations reinforces the importance of caution in drawing conclusions from the shape of contusions as to their exact causation. Although attention has been paid to colour changes in resolving skin-bruising, possible changes in shape and size have

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Fig. 1. Right calf.



Fig. 2. Right calf.



Fig. 3. Right wrist.

not been much investigated. There is no information, for example, of the affect of the age of the subject, the position of the lesion or the thickness of the subcutaneous fat.

References

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